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AUTHOR Adams, Ronald D.
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ABSTRACT

This paper presents some ideas, opinions, and hunches concerning ways to help the professional educator become a more efficient consumer of research. The author states that implied throughout the paper are two assumptions: (1) that educators should be able to interpret and utilize research findings appropriate to their professional responsibility; and (2) that educators do not generally utilize research in their professional roles due to lack of research knowledge and skills and/or positive attitudes toward research. In this paper some cognitive competencies that appear to be important in the interpretation and utilization of educational research are identified. Affective considerations are discussed in regard to the educator as an intelligent consumer of research. Finally, problems that may hinder the effective utilization of research are posed as are strategies that would help alleviate these barriers. (RC)

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Strategies for More Effectively Interpreting and Utilizing Education Research Findings: Implications for Professional Educators

Address Delivered to 1976 AERA Meeting

Ronald D. Adams, Western Kentucky University

This address is directed to professional educators who have an interest in the utility of research to their profession and who are interested in propogating and promoting research among their collegues. The purpose of this report is not to defend the value of research to the profession nor to defend the idea of the professional educator as a consumer of research. The purpose of this report is to present some ideas, opinions, and hunches concerning ways to help the professional educator become a more efficient consumer of research. The basis for the majority of my remarks comes from interactions with teachers, administrators, counselors, and other professional educators through teaching graduate courses and conducting research in public and private schools.

Implied throughout this presentation are two assumptions: 1) that educators should be able to interpret and utilize research findings appropriate to their professional responsibility, and 2) that educators do not generally utilize research in their professional roles due to lack of research knowledge and skills and/or positive attitudes toward research. My remarks will be of a general nature and not directed at any specific group of educators nor at a specific level of education. However, the concept of differing research competency for varying educational levels and roles is an intriguing idea for discussion.

Finally, this address will be limited to the discussion of the professional educator as a consumer of research rather than as a producer of research. However, I believe that educators at all levels, in all roles,

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can profit from direct involvement in research activities, whether in the form of action research conducted to solve immediate and local problems, or more widely generalizable research conducted to investigate broader problems in education.

It may be helpful to clarify the usage of two terms as they are used in this presentation. The term research is referred to as a body of knowledge on some topic or problem, derived through scientific processes to arrive at reasonably valid findings from which substantiated conclusions, generalizations, and/or decisions concerning the topic can be made. Research may also be referred to as the process through which verifiable knowledge may be obtained concerning a specific educational topic or problem. No attempt will be made to differentiate between the usage of this term as a product or a process in this report. The context in which it is used should suffice to determine which of the two related meanings is intended. The term consumer will be used to describe the educator as a reader, interpreter, synthesizer, and utilizer of research.

Given these parameters, my discussion will center around three major themes: 1) identification of cognitive knowledge and skills necessary for educators to be intelligent consumers of research, 2) affective considerations in helping educators to become intelligent consumers of research, and 3) strategies that if employed could lead to more intelligent and widespread utilization of research by educators.

Cognitive Competency

The first theme suggests that there are competencies educators should possess to effectively interpret, synthesize, and utilize research. There is general agreement among authors of basic educational research methods

texts as to the content areas that are important for the beginning student in educational research. The primary differences occur in specific approach, sequencing, and emphasis rather than content areas. Bramble (1971) suggested eight topics as typically contained in research methods texts. He states:

> The topics usually considered by elementary texts are: 1) the scientific method and its application to problems in education; 2) sources of information on educational topics; 3) sampling theory and procedures; 4) measurement theory and testing; 5) procedures for gathering data, representing and interpreting the data, and performing statistical tests of hypothesis; 6) aspects of adequate experimental design; 7) writing the proposal and/or research report; and 8) sources of funding for research projects in education.

While these topics are broad, they are indicative of general areas traditionally considered necessary for basic understanding of research methodology. It should be noted that many traditional texts appear to be written for the student enrolled in a research methods class, who will ultimately be required to produce a formal research paper or thesis. This structure could create the idea that research can or should be conducted only within the academic structure of higher education. Also, the idea that research is appropriate only for the sake of other research and to be read only by other researchers is a potential danger. There is a recent trend by publishers to market books geared more to the consumer than to the producer of research. (Millman and Gowin, 1974; Lehmann and Mehrens, 1971; Skagenand Weinberg, 1971; Cook and LaFleur, 1975 and Huck, Cocmier, and Bounds, 1974). This type of publication should provide a needed supplement to the more traditional texts currently being utilized.

While the review of texts in research methods provides a broad classification of topics suggested for the beginning student in research, identification of more specific competencies would allow for more adequate

planning for educational research courses and provide a basis for educators to determine their level of abilities in this area. Worthen (1975), in the January 1975 issue of the Educational Researcher, summarized three USOE sponsored projects designed to identify competencies for personnel engaged in educational research and evaluation activities. Twenty-five general "tasks" with more than eighty associated "competencies" were reported as those "frequently needed" in educational research and evaluation. It would be too lengthy to list all twenty-five tasks and eighty-plus competencies in this discussion, and many of the competencies seem appropriate primarily for the researcher (such as knowledge of the electronic computer). However, there were certain tasks and competencies that seem appropriate for the consumer as well as the producer of research. As an example, fourteen of the twenty-five tasks are presented from that article that should have implications for the consumer:

1. Obtaining information about an area to be researched or a phenomenon to be evaluated . . .

2. Drawing implications from results of prior research and practice . . .

3. Conceptualizing the research problem or defining the object of the evaluation . . .

4. Selecting an appropriate inquiry strategy for addressing the research or evaluation problem . . .

5. Formulating hypotheses or questions to be answered by the study . . .

7. Selecting appropriate research and evaluation designs to collect data to test the hypothesis or answer the question . . .

8. Identifying the population to which results should be generalized, and selecting a sample of population . . .

9. Applying the research or evaluation design and recognizing or controlling threats to validity . . .

14. Identifying classes of variables for measurement . . .

15. Selecting or developing techniques of measurement . . .

16. Assessing the validity of measurement techniques . . .

17. Using appropriate methods to collect data . . .

19. Choosing and employing appropriate techniques of statistical analysis . . .

21. Interpreting and drawing appropriate conclusions from data analysis . . .

There are certainly other competencies and tasks that the consumer would need. For example, a command of the research vocabulary is an elementary but necessary competency for the consumer. Competency in synthesizing research and ultimately initiating educational change based upon research findings would be particularly important for the consumer. The above discussion, especially the competencies reported by Worthen, would appear to offer a useful guide to a more comprehensive listing of competencies needed by the educator.

In summarizing the first theme, there appears to be a general agreement among authors concerning the topic areas important to understanding research. There are emerging studies to identify the competencies necessary to conduct research and evaluation which have implications for the consumer of research. These sources are valuable in identifying the competencies needed by educators who ultimately benefit by the research.

The following ideas should be considered in further developing competencies for the consumer of educational research: 1) the research must reach those who have a need for or interest in the knowledge obtained through the investigation; 2) effective communication must occur between the researcher and the consumer, usually via the written report; 3) the

consumer must be able to determine the relevancy of the research to his area of interest, problem, or situation; 4) the consumer must be able to determine the relative merit of the research based on sound metholodical procedures; 5) the consumer must possess the ability to synthesize research findings to arrive at meaningful implications for practical application; and 6) the consumer must be able to intelligently apply and implement the knowledge obtained from credible and appropriate research activities. Specific competencies identified under these broad areas would contribute to the propogation of research and add significantly to the utilization of research findings.

A next step then is the development of a list of consumer competencies that reflects the collective thinking and investigation of the educational profession in general and the research community in particular. This charge could most effectively be accomplished through the American Educational Research Association, possibly initiated within this special interest group (Researchers in Action).

Affective Considerations

The identification of the cognitive competencies required for consumers to intelligently read and utilize research findings have been discussed. An equally important consideration is the attitude of the consumer toward research. For the professional educator to benefit from the research conducted in education, he/she must be willing not only to obtain the knowledge and skills necessary for a sophisticated consumer, but also be willing to actually engage in reading, synthesizing, and intelligently applying the findings. Little scientific investigation or theoretical discussions have been devoted to the development of attitudes toward research, even by authors of basic research

methods texts. Yet, most college courses in research methods state as an objective the utilization of research by the student, either through the reading and synthesis of the research or through conduct of research.

It may be of benefit to explore possible considerations in the development of an affective awareness in professional educators toward research. One consideration is in the area of professional responsibility. More precisely, is the educator professionally responsible for keeping abreast of information and knowledge in his/her field and the profession at large? I think that most educators would agree that this is a reasonable professional responsibility. For example, I would hate to think that my children would go to a teacher who was utilizing only the educational knowledge, skills, and materials that were known in 1956, the same as I would hate to send my children to a physician who was limited to the medical knowledge, techniques, and medicine of that year. The degree of importance teachers and other educators place on this professional responsibility is crucial to the advancement of the profession.

This attitude of professional responsibility is essential to the development of attitudes toward research. If the educator does not really have a commitment to his/her profession, it is highly improbable that research will have a very high priority in their professional lives.

A second consideration is that of attitude toward research as a credible process for arriving at meaningful information in education. Many educators believe that good teaching, administration, counseling, etc. is more art than science, and that the scientific investigation of educational problems cannot be effectively conducted. They believe that effective education must rely on untested theories and individual intuitions. While

this belief is usually not publicized, the actions or lack of action by educators in the utilization of research would support this contention. Unless the educator views research as a useful, even a necessary step in the development of sound educational practices, it is doubtful he/she will bother to read, much less utilize research findings.

A third consideration related to credibility is that of practicality. This idea has implications for both producers and consumers of research. More research is needed that has practical applications to local educational problems. However, the professional in education must be aware that much research does exist and that research findings can aid in making practical educational decisions. It is the responsibility of the consumer, as well as the researcher, to identify and publicize priority areas of needed research.

An educator may have commitment to the profession and may view research as credible and practical and still not read or utilize research to any meaningful extent. A fourth affective consideration focuses on motivation. The educational practitioner must be motivated to the extent of active participation in actually doing that which is considered important. Procrastination is a common fault that we are all guilty of to some degree. However, it is important for the educator to recognize the problem of "I'll do it tomorrow or next week or next month" as a major impediment to the utilization of research. If educators can be motivated to overcome this tendency, more beneficial use can be made from the labors of the research.

There is yet another affective consideration that may hinder the utilization of research. Many educators have a fear of research. The teacher may fear that research findings will dictate how he/she must teach

or that those variables which are determined to be effective will be beyond their capability. The administrator may fear the findings of research may cast their particular school in a bad light or be in opposition to current administrative practices. The school counselor may feel that research may show their contribution to education as being ineffectual.

Wynne, (1970) goes so far as to say that educational research is being "tamed, controlled, restricted, and sedated," by "schoolmen" because of the fear that research can produce knowledge that the community can use to make greater demands on the schools. He further argues that educational research should be supported by and responsible to a constituency other than schoolmen. I do not agree with the sentiment expressed by Wynne, but I do think that consciously or subconsciously many educators suspect the motives of researchers and suspect research findings. Much of this suspicion and mistique about research can be dispelled through the acquisition of more knowledge about research and its strength and limitations. The difficulty arrives, however, in the motivation of these educators to gain more knowledge about research.

Somewhat associated with this fear of the potential power of research is the fear of obtaining the research competencies needed to harness this power. I refer specifically to the anxiety expressed by many educators toward the research courses required in many graduate programs. The research requirements are typically viewed by graduate students as hurdles which they must negotiate to obtain an advanced degree. They are often so frightened of the research requirements, that positive attitudes toward research and even the research competencies are difficult, if not impossible, to acquire. An important affective consideration should be in dispelling these fears and cultivating a more positive attitude toward research based on a

realistic assessment of research requirements and purposes.

I have listed and briefly discussed six broad affective considerations that may effect the utilization of research findings. As suggested for the cognitive area, it is important that these and other affective considerations be further identified, explored, refined, and investigated. For example, personal characteristics of the educator such as intellectual inquisitiveness, open-mindedness, creativeness, perseverance, and altruism would appear to influence their susceptibility to the utilization of research. Again, I call upon the eduational research community and other interested members of the profession to consider the impact of the affective dimension on this problem.

Strategies

The third theme of this presentation is concerned with strategies to promote more effective interpretation and utilization of research findings. The initial assumptions for this presentation were that professional educators should, but generally do not, have the ability and/or attitudes to allow for the effective interpretation and utilization of research findings. The remainder of my comments will address some of the possible reasons for this state-of-the-profession and offer strategies that may help alleviate the condition. These problems and strategies should not be considered as well-documented fact, or even based on scientific investigation, but as points for further consideration and study.

Institutions of higher education have played a major role in the development of educational research through eduational programs designed to prepare educators at all levels. Inherent within most of these programs are research courses designed to produce intelligent consumers of research

and depending on the program and level, producers of research. Accrediting agencies such as the National Council for the Accreditation of Teacher Education (NCATE) have helped in the promotion of educational research through standards requiring advanced programs to include, "the study of research methods and findings." Other regional and state accrediting agencies have similar requirements. The problem of omission of research requirements, at least at the graduate level, is not of major consequence. The effectiveness of these requirements are of concern, however, and my first comments are directed toward these programs.

Generally, teacher education faculty are prepared through completing a doctoral program which includes a series of research courses and culminates in a dissertation. This is particularly true now with the increased availability of educators with the doctoral degree seeking employment. Typically, these educators experience the anxiety referred to earlier as fear of obtaining research competencies. Often the professors who conduct the research classes and the doctoral student's dissertation committee perpetuates the hurdle concept through unsympathetic or "ivory tower" attitudes toward the student. The resulting outcome are education professors who enter colleges and universities with a negative attitude toward research.

This attitude toward research is carried to the masters and specialist level, either consciously or subconsciously resulting in perpetuating the same attitudes. This notoriety of research preparation is a major problem in establishing the positive affective climate conducive to valuing research as a process and as a product. This problem seems to exist for professionals in education more so than for their collegues in other disciplines.

Coupled with this general negativeness toward research is a related problem of course conduct. Research classes are often conducted by professors

whose teaching interests are in other areas, but who because of demand for research classes or because of decline in enrollment in their interest area, are administratively assigned to teach research courses. This often results in research courses being taught by professors who lack the knowledge, skills, research experience, and attitudes to effectively bring about the desired change in students. Research classes become tests of survival for teachers and students or, worse, promote indifference on the part of both.

Another extreme is the professor whose major interest is in the conduct of his own research and has little motivation in teaching. This professor may have little patience with the beginning student in research.

I do not suggest that all teachers of research classes fall into either of the two sterotypes described. I do suggest that the teachers of research classes should be considered as a possible contributing factor to the problem of cognitive deficiency and adverse attitudes toward research by educators at all levels.

An obvious strategy to combat this problem is the careful consideration of teachers responsible for research courses. Faculty should be selected who are competent in content and who have the motivation and desire to teach in the research area. Well-defined objectives and competencies need to be stated for research courses and more effective means of attaining those competencies developed. Certainly, attention to the attitude of students should be emphasized and conscious effort made to nurture positive attitudes toward research.

Another strategy would be to integrate and promote research through means other than research courses. The value of research should be evident through the critical and vigorous approach to professional education topics

by teachers of other courses. This strategy has implications for both the undergraduate and graduate courses. Since this requires research competencies and positive attitudes on the part of other teachers, a part of this strategy may be inservice education for faculty.

Solutions to these problems may be obtained through more effective instructional strategies with attention given to those who will carry out those strategies. In many teacher education programs, a rethinking of the objectives and purpose of the research requirements and the evaluation of the outcomes would provide more insight toward the nature of the problem and ultimately aid in the solution. If graduates of a program are incapable of interpreting and utilizing research through lack of understanding, knowledge, and skills, this should be known and remedies determined. If graduates have developed such negative attitudes that they never intend to read research after class or project requirements are completed, this needs to be known and steps taken to remedy the problem. I doubt if the traditional method of teaching research courses--that of reading a required text, attending lectures on the topics covered in the text, and writing a research proposal--will do much toward solving these problems.

An alternate approach worth investigating would be to utilize the educational concepts advocated by the competency-based education movement. In this approach competencies to be acquired are made public to the student at the beginning of the course. Learning alternatives are provided to allow the student to choose his/her own style of learning and progress at their own rate. Evaluation of competencies is provided when the student feels "ready" and the idea of pass or fail is replaced by the idea of competent or not yet competent. The student has more freedom to choose objectives

and has more responsibility for his/her own learning. For a more indepth discussion of the competency-based approach to education, books by Hall and Jones (1976), Houston (1974), and Huston and Howsam (1972) are suggested.

It may be a naive idea that all students will be "turned on" by research and develop to the cognitive and affective levels desired. But let not the institutions of higher education "turn off" students to research through insensitive and ineffective research requirements.

If the state of the profession regarding research utilization is to progress, all responsibility cannot rest with the colleges and universities. Other constituents of the profession must assume a share of the responsibility. There are two problems that I wish to present for consideration. The first is that of continued growth in research knowledge and skills. While there presently does not exist a recognized list of competencies for the consumer of research, it is highly probable that this list will contain more competencies than would be feasible to acquire in one or two courses in a degree program. For educators to continue to grow in this area, additional opportunities and incentives must be provided by their employers and/or through professional organizations.

A second problem is that of motivation to read and utilize research as a regular and continuing part of professional activities. While this attitude can be initially developed as part of formal education, undergraduate and graduate classes are only a small part of the educator's professional life. It would be unrealistic to think that an educator would be motivated to continue utilizing research simply as the result of courses taken in college, especially if none of his collegues are so inclined.

Strategies to affect these problems appear somewhat more complex, as the problems seem even more formidable than those within teacher educational

programs. One key may be to provide some type of incentive to encourage educators to read and utilize research in their particular professional role. For example, some release time could be given to educators who wish to seriously study a given educational problem. Accountability for this time could be met through a synthesis of information on the problem, and recommendations for application or non-application in a specific setting could be provided.

Another strategy would be the formulation of special interest groups that have common concerns or interests in some educational area. Through the team approach, the work could be shared and collective decisions regarding some educational problem made.

Faculty inservice programs could be devoted periodically to workshops on some aspect of research competency or the reporting of current research on some educational problem of general faculty interest. These inservice programs could be presented by invited consultants or by members of the faculty.

The development of a research office within the school district where faculty and administrators could go for assistance or could ask for special research services could facilitate research utilization and promote a favorable attitude toward research. This office should be responsive to faculty and administrators of schools within the district and should be staffed by trained educational research personnel.

Rossi (1975) touches on an important strategy in responding to Worthen's (1975) list of researcher competencies. He suggests more of a partnership arrangement between those engaged in research and educators in schools participating in research projects. This idea suggests that educators

be considered as "partners" rather than "subjects." It would appear that such an arrangement would promote a more trusting relationship between the educational research community and the consumer of research. Through dialogue, a more healthy rapport could be established and more positive attitudes toward research promoted.

Similar strategies to those listed for schools could be stated for local, state, and national education organizations. The lack of emphasis on research in many of the leading education associations is apparent. The NEA, AASA, and ASBA place little emphasis on education research at their national meetings and, I suspect, at most state meetings. If groups of interested members could be formed, special interest meetings held and promoted, the interest in research could be greatly expanded.

Inherent within the discussion of strategies for agencies outside higher education is the assumption that research is valued by the administrators of the agency or at minimum by a group of faculty members. There must be some nucleus within an organization that will promote and encourage the utilization of research. The identification and encouragement of this nucleus probably will have to come from those of us presently involved in teaching research and/or promoting research in these agencies. I suggest people such as in this audience as a beginning.

Summary

In this presentation, I have identified some cognitive competencies that appear to be important in the interpretation and utilization of educational research. Affective considerations have been discussed in regard to the educator as an intelligent consumer of research. Finally, I have posed problems that may hinder the effective utilization of research and

proposed strategies to help alleviate these barriers. This presentation was not meant to be a comprehensive discussion of the topic nor was it based on reported empirical evidence that the problems discussed exist.

I do not expect everyone to agree with my comments and certainly do not anticipate mass initiation of the suggested strategies. The value of my address and the topics presented in this symposium is to stimulate thinking among educators concerned with research and the utilization of research within the education profession. I hope my comments have accomplished this objective.

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